Amendments to the Specification:

Please replace the paragraphs beginning on page 3, line 18 through page 7, line 21, with the following rewritten paragraphs:

MEANS FOR SOLVING PROBLEM

In an exposure apparatus and a device manufacturing method of this invention, the following constructions are adopted in order to resolve the above problems.

A first invention is an exposure ~~apparatus (EX, EX2),~~ apparatus, comprising a projection optical system which projects and transfers a ~~pattern (PA)~~ pattern formed on a ~~mask (R)~~ mask onto a ~~substrate (W)~~ substrate and a substrate ~~stage (42),~~ stage, positioned below the projection optical system, which while holding the substrate moves in directions substantially perpendicular to the direction of the optical ~~axis (AX)~~ axis of the projection optical system, and comprising a ~~detector (81),~~ detector, positioned on the periphery of the projection optical system, which detects the position of the substrate stage or of the substrate along the optical axis direction, and a control ~~device (70)~~ device which halts or reverses movement of the substrate stage based on the result of detection by the detector. According to this invention, the risk of collision of the substrate or substrate stage with the projection optical system can be detected in advance, so that by halting or reversing movement of the substrate stage, collisions of the substrate or substrate stage and the projection optical system can be avoided beforehand.

Further, if an elevating ~~device (47)~~ device which moves the substrate ~~stage (42)~~ stage in the direction of the optical ~~axis (AX)~~ axis is comprised, and the control ~~device (70),~~ device, by operating the elevating device based on detection results of the ~~detector (81)~~ detector moves the substrate stage away from the projection optical ~~system (30)~~ system along the optical axis direction, then, when risk of collision is detected by the detector, by driving the elevating device of the substrate stage to move the substrate and substrate stage away

from the projection optical system, collision of the substrate or substrate stage with the projection optical system can be avoided.

Further, if the ~~detector (81)~~ detector is positioned at a plurality of ~~positions (D)~~ positions more distant than the stopping ~~distance (S)~~ distance of the substrate ~~stage (42)~~ stage in the direction substantially perpendicular to the optical ~~axis (AX)~~ axis from the projection optical ~~system (30),~~ system, then by positioning the detector at a plurality of positions more distant than the stopping distance of the substrate stage, the substrate stage, which is traveling toward the projection optical system, can be stopped before colliding with the projection optical system.

Further, if an vibration isolation ~~device (300)~~ device which can move along the direction of the optical ~~axis (AX)~~ axis and supports the projection optical ~~system (30)~~ system in a manner preventing vibrations is comprised, and the control ~~device (70)~~ device operates the vibration isolation device to raise the projection optical system in the optical axis direction based on detection results of the ~~detector (81),~~ detector, then when risk of collision is detected by the detector, by driving the vibration isolation device, the projection optical system is moved away from the substrate and substrate stage, so that collision of the substrate or substrate stage with the projection optical system can be avoided.

Further, if a second vibration isolation ~~device (400)~~ device which can move along the direction of the optical ~~axis (AX)~~ axis and supports the substrate ~~stage (42)~~ stage in a manner preventing vibrations is comprised, and the control ~~device (70)~~ device operates the second vibration isolation device to lower the substrate stage in the optical axis direction based on the results of the ~~detector (81),~~ detector, then when risk of collision is detected by the detector, by driving the second vibration isolation device, the substrate and substrate stage are moved away from the projection optical system, so that collision of the substrate or substrate stage with the projection optical system can be avoided.

Further, if an exposure ~~apparatus (EX, EX2),~~ apparatus, in which the space between a projection optical ~~system (30)~~ system which projects a ~~pattern (PA)~~ pattern onto an object ~~(W, 42)~~ and the object positioned on the image plane side of the projection optical system is filled with a liquid, comprises an opposing member ~~(30, 91, 92)~~ positioned at a distance from the object in the direction of the optical ~~axis (AX)~~ axis of the projection optical system and a control ~~device (70)~~ device which, in response to notification of the occurrence of an abnormality, moves the object and the opposing member apart along the optical axis direction, then even in so-called liquid-immersion type an exposure apparatus, collision of the object with the opposing member can be avoided.

Further, if the control ~~device (70)~~ device moves the object ~~(W, 42)~~ and the opposing member ~~(30, 91, 92)~~ apart along the direction of the optical ~~axis (AX)~~ axis in response to notification of the occurrence of an earthquake, then damage to the exposure apparatus due to the earthquake can be prevented, and so even when exposure processing is stopped due to an earthquake, exposure processing can be quickly resumed.

Further, if the object ~~(W, 42)~~ can move within the plane perpendicular to the optical ~~axis (AX),~~ axis, and the control ~~device (70)~~ device moves the object and the opposing member ~~(30, 91, 92)~~ apart along the optical axis direction in response to notification of an abnormal operation, the collision of the object with the opposing member can be avoided.

Further, if an elevating ~~device (47)~~ device which moves the object ~~(W, 42)~~ in the direction of the optical ~~axis (AX)~~ axis and a driving device ~~(300, 93)~~ which drives the opposing member ~~(30, 91, 92)~~ in the optical axis direction are provided, and if the control ~~device (70)~~ device controls at least one of the elevating device and the driving device to move the object and the opposing member apart along the optical axis direction, then by means of the elevating device and driving device, the object and the opposing member can be

moved apart from each other, so that collisions between the object and the opposing member can be reliably avoided.

Further, if a first frame ~~(110)~~ which supports the opposing member ~~(30, 91, 92)~~ is comprised, and the driving device is an vibration isolation device ~~(300)~~ which supports the opposing member via the first frame so as to enable movement in the direction of the optical ~~axis (AX),~~ axis, then existing devices can be used to move the opposing member in the optical axis direction, and avoidance of collisions between the object and the opposing member can be achieved while restraining equipment costs.

Further, if a second vibration isolation ~~device (400),~~ device, which supports the object ~~(W, 42)~~ so as to enable movement along the direction of the optical ~~axis (AX),~~ axis, is further provided, and the control ~~device (70)~~ device controls at least one of the elevating ~~device (47),~~ device, vibration isolation ~~device (300),~~ device, and second vibration isolation device ~~(400)~~ to move apart the object and the opposing member along the optical axis direction, then existing devices can be used to move the object in the optical axis direction, and avoidance of collisions between the object and the opposing member can be achieved while restraining equipment costs.

Further, if the driving ~~device (93)~~ device drives the opposing member ~~(91, 92)~~ in the direction of the optical ~~axis (AX)~~ axis with respect to the projection optical ~~system (30),~~ system, then by driving the opposing member, positioned on the periphery of the projection optical system, in the optical axis direction, avoidance of collisions between the object and the opposing member can be achieved still more reliably.

Further, if the object ~~(W, 42)~~ is a ~~substrate (W)~~ substrate exposed to a ~~pattern (PA)~~ pattern or a substrate ~~stage (42)~~ stage holding a substrate, and moveable with at least three degrees of freedom, then collisions between the substrate or substrate stage and the opposing member can be avoided.

Further, if the opposing member ~~(91, 92)~~ comprises at least one of a liquid supply ~~device (91)~~ device to supply liquid to, and a liquid recovery ~~device (92)~~ device to recover liquid from, the space between the projection optical ~~system (30)~~ system and the ~~object (W, 42),~~ object, then collisions between the substrate or table and the liquid supply device or liquid recovery device, positioned on the periphery of the projection optical system, can be avoided.

A second invention is a method of device manufacture comprising a lithography process, in which an exposure ~~apparatus (EX)~~ apparatus of the first invention is used in the lithography process. According to this invention, devices comprising fine patterns can be manufactured while avoiding collisions between the substrate or substrate stage and the projection optical system.